**Title:** Identification of mec-A gene in phenotypic methicillin-resistant Staphylococcus aureus strains isolated from clinical specimens  

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**Abstract:** Backgrounds and Objectives: Staphylococcus aureus is one of the most agents in hospital-acquired infections. Treatment of patients with infection due to methicillin-resistant S. aureus (MRSA) has been known as a major therapeutic problem in the last decade. The aim of this study was frequency determination the mec-A gene in S. aureus which were isolated from clinical specimens.

Materials & Methods: In this study 195 Staphylococcus isolates from clinical specimens such as suppurative secretions, wound, abscess, sputum and burnt wounds were examined. The specimens were related to hospitalized patients in four educational hospitals in Ahvaz city. All of isolates were purified by culturing in Blood agar and then grown colonies were identified as S. aureus using standard biochemical tests. Drug resistance patterns of S. aureus isolates were determined against 10 antibiotics by disk diffusion method. Oxacillin agar screening test was performed based on the CLSI guidelines to detect MRSA phenotypically among all isolated S. aureus. Finally after DNA extraction from MRSA strains, PCR was carried out for detection of mec-A gene.

Results: The results of this study showed sensitivity of S. aureus isolates to 10 antibiotics was variation as follow: Rifampin 73.8%, Ciprofloxacin 49.7%, Cephalothin 60%, Oxacillin 49.2%, Clindamycin 89.2%, Gentamicin 53.3%, Erythromycin 48.2%, Penicillin G 3.1%, Vancomycin 100% and Chloramphenicol 100%. Out of 195 S. aureus isolates, 99 isolates (50.8%) were phenotypically resistance to methicillin and the mec-A gene was detected in 96 of these isolates by PCR method.

Conclusion: This study showed that 100% of S. aureus isolates were susceptible to Vancomycin and Chloramphenicol, however the most of them were known as MRSA isolates. Although these results show that Vancomycin could be used as a valuable and choice drug for treatment of infections due to MRSA, but as the other studies have shown, such therapeutical pattern could be resulted in increased Vancomycin MICs and reducing effectiveness of Vancomycin in treatment of staphylococcal infections, the subject that is important and should be noticed by surveillance systems in community.

**Key words:** Staphylococcus aureus, MRSA infection, mec-A, methicillin-resistant.

**Presentation:** Poster